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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

CASCADEL AND BUCK CREEK CHECK AREAS

SUMMARY OF SURVEYS - 1928

by

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Assistant Entomologist

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Berkeley, California
May 3, 1929

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Some knowledge is necessary of the infestation cycles of the western pine beetle in all studies of factors affecting the increase and decline of epidemics. It is also of great importance in determining the areas that might need control work or might be of special interest for the study of a particular problem. In order to supply the desired information the policy has been adopted of locating so-called "check areas' wherever need is felt for such an area. These areas are in most cases cruised annually, and a record is kept of all loss by year, season and cause of injury.

During 1928 two such check areas were established, one on the Cascadel area of the Sierra National Forest and the other in the Buck Creek Unit of the Modoc National Forest. The Cascadel plot, which is one mile square, is part of the Cascadel area which was cruised as part of our work in that locality from 1925 to 1927 inclusive. When our center of work was moved to the Modoc area in 1928 it was decided that the entire Cascadel area was larger than necessary for a check area, and the area was reduced to 640 acres.

The Buck Creek area was established for the purpose of following the course of the infestation in the North Warner Mountains, in connection with biological studies which are being followed in that area. The Lava Bed region of the Modoc National Forest has already been well provided with check sections, which have been followed by F.P. Keen for a number of years.

Cascadel Check Area

This check area was selected as being representative of the west side western yellow pine type. The site quality averages about III. The stand is about 90 per cent yellow pine, with some white fir, incense cedar and sugar pine. Oaks, alder and Oregon ash are the principal hardwoods. The elevation is between 3500 and 5000 feet, the topography from hilly to fairly steep.

The area is situated near the center of the Cascadel Basin, and includes the south half of Section 15 and the north half of Section 22, T 8 S, R 23 E. The Cascadel permanent sample plot used in the tree selection studies runs through the center of the west half of this check area.

The loss caused by the western pine beetle on this area has been determined annually since 1924. In Table 1 the loss is given for the years 1924 to 1927 inclusive. Part of the 1928 loss is also given, including all loss found up to October, 1928.

TABLE 1

Summary of Losses* in Cascadel Area, 1924 to October 1928

Year	D. brevicomis Summer Vol.	D. brevicomis Summer Trs.	D. brevicomis Winter Vol.	D. brevicomis Winter Trs.	D.mont. Vol.	D.mont. Trs.	Top-Killed Vol.	Top-Killed Trs.	Flathds Vol.	Flathds Trs.	Ips&D.b. Vol.	Ips&D.b. Trs.
1924	10,310	12	27,540	18								
1925	146,490	123	30,200	40								
1926	15,620	22	16,440	30	350	1	49,450	58	680	3		
1927	133,820	116	49,810	47	13,640	4	25,920	21	600	5	140	2
1928	25,470	44	12,250	15			2,860	3	40	1		

*Note 1928 winter loss incomplete

Buck Creek Check Area

The Buck Creek Area was selected as representative of the yellow pine type of the North Warners. It includes 320 acres in Secs. 8 and 5 (unsurveyed), T 46 N, R 15 E. The area runs one mile north and one-quarter mile east and west from the point at which the High Grade Forest Service trail first crosses Buck Creek. The elevation is between 5500 and 6000 feet, and the topography hilly to steep with a number of rocky points, ridges and "slides". The site quality varies between II and IV.

The south half of the plot is about 90 per cent yellow pine with some white fir and incense cedar; the north half of the area at the higher elevations and north and northeast exposures and the moist areas along the creek run as high as 50 per cent white fir, with 10 to 20 per cent cedar in small areas. Mountain mahogany (Cercocarpus ledifolius) is the most common shrub, occurring in a number of fairly large areas.

This area was cruised for insect loss for the first time in September 1928. The complete summer and winter loss for 1927 was marked and the summer and part of the winter loss for 1928. A summary of this loss is given in Table 2.

Table 2

Western Pine Beetle (D.brevicomis) Loss

Buck Creek Check Area - 320 Acres

Year:	No.Trees	Volume b.f.
1927: Summer	92	99,320
1927: Winter	63	67,930
1927: Total	155	167,250
1928: Summer	14	15,870
1928: Winter	7	9,480
1928: Total to Sept. 1928	21	25,350

This shows a very decided decline in the 1928 infestation, the 1928 summer loss being only 16 per cent by volume of the 1927 summer loss.

It is noteworthy that the loss on both the Cascadel and Buck Creek check areas was unusually high in 1927, but quite low in 1928.

It is planned to cruise these two check areas annually at about the same time each year, in order to determine the infestation cycle for a long period of time.

H. L. PERSON,
Assistant Entomologist.

Berkeley, Calif.,
May 3, 1929

Project Area Modoc N.F. Unit Buck Creek Check Area Camp No.

Date Cruised Sept, '28 Compass man H. L. Person N. 1/2 T. R. Sec.

K25

K77
W.F. Repro.

Y.P & W.F.
overmature
& Reprod.

L11
K100
L10
K101
K102
L9
L8
L54

Rocky Pt.
Y.P. & W.F. 50%

K166
K167-77
K165

K76
Rocky

Rocky
Rocky
K26
K27
Y.P. & W.F.
Y.P. & W.F. 25%
K28

K164
Y.P. & W.F.
K161-63
K97-99
L7

Rocky Ridges
K103
-122
L6
K155-160

L4
K75
K80 K79
K81
Y.P. & W.F.
Rocky
K78
K129

L53
L52
Rock Slide
Rocky
K30
K31
Y.P.
25%
W.F
Y.P. W.F.
25%

K96
K95
K94
K157
L25ex.
Rocky
Exp. Trees.
L1-4
L7 Exp tree
Scattered Y.P.
Y.P. Reprod & Brush
K93

K24
Rocky Pt.
K14
-23
K74
K13
K12
K10
K11
K64
-73
K63
K62
K61
Pure Y.P.
K132-38
K81
K82-85
Site IV
Pure Y.P.

K60
L2
L3
Scattered Y.P.
Brush
K86
K39-46
K153-56
K1 exp.
K2 exp.
K3 exp.
K150-52

K9
K7
K8
K6
K58
K59
Scattered Y.P.
K87
K47
K48
K188
K49

K3
K56
K55
K57
K5
K4
L1
Brush
Y.P.
K50
52-54
K1
K2
Y.P.
K51
L5
Scattered Y.P.
Y.P. Reprod.
K89-92

5 10 15 S 1/2 20 25 30 35 40